

REMARKS

Claims 14, 7-18 and 20 are pending in the application.

Claim 1 is amended above to more clearly identify what the Applicant regards as the invention. Claim 10 is amended above to correct a typographical error.

Claims 5-6 are cancelled from the application above without prejudice.

Claim 20 is newly added to the application in this paper.

No new matter has been added to the application by way of these specification and claim amendments.

I. THE CLAIM 10 OBJECTION

The examiner objected to claim 10 for including a typographical error.

Claim 10 is amended above to correct the error.

II. THE ANTICIPATION REJECTION

The examiner rejected claims 1-18 for anticipation by Hugo (USP 6,194,484). It is the examiner's position that all of the claim features are found identically in Hugo. The examiner's rejection is traversed because Hugo does not disclose every feature of the claimed invention either prior to or after the amendments above to claim 1.

The pending application claims are novel because Hugo does not disclose an (IR_T) reflective flake comprising an infrared reflective core flake and an infrared transparent material which is coated on some or all of the surface of the core flake. Rather, Hugo discloses an IR reflective coating comprising plate-shaped particles and separate pigment particles. The Hugo material is an example of a prior art "Type 3" coating. (*C.f.* page 2, line 29 to page 3, line 14 of the PCT application). The Applicant disagrees with the Examiner's statement that "the binder necessarily causes second particles to coat on the surface of the first flake" and submits instead that the flake of the present invention is quite clearly a composite material comprising an IR_T transparent layer which is adhered to an IR_T reflective core. (*See, e.g.*, page 3, lines 27-28 and Figure 3). Thus, Hugo discloses a different infrared reflective coating to that of the present invention and clearly neither anticipates nor suggests the infrared reflective flake of claim 1 or the method of new claim 20.

Claim 1 is also amended above in a manner that causes it to be even further novel over Hugo. Claim 1 is amended to direct it to an infrared (IR_T) reflective flake comprising an infrared reflective core flake and an infrared transparent material which is coated on some or all of the surface of the core flake, wherein the reflector core has a thickness of less than 0.2 μm and wherein the core flake has a surface texture in the range 0.2 to 0.4 μm and a depth to pitch ratio of less than 0.5. As discussed in the original PCT application, if the reflector core is too rough it will scatter IR_T radiation and reduce IR_T reflectivity when in a coating. (C.f. page 4, lines 21-24). Conversely, the inventor discovered that a surface texture too close to zero results in specular reflection at visible wavelengths. Thus, a paint or other coating which is an efficient thermal reflector might have undesirable visual properties if the texture of the core flake is not appropriately selected. The core flake texture of the present invention (i.e. a surface texture in the range 0.2 to 0.4 μm and a depth to pitch ratio of less than 0.5) has been found by the inventor to be particularly effective in controlling IR_T scatter, whilst still providing a visually appealing coating. This optimal surface texture range is clearly neither disclosed in, nor suggested by Hugo. Indeed, the section of text in Hugo highlighted by the Examiner as disclosing this feature - column 2, lines 15-20 – actually relates merely to the length, breadth and thickness of the first, plate-shaped particles and is unrelated to particle surface texture.

III. THE OBVIOUSNESS REJECTION

The examiner rejected claims 3-18 for being unpatentable over Hugo for obviousness. It is the examiner's position that a person having ordinary skill in the art would have found it obvious to adjust the dimensions of the flakes and particles disclosed in Hugo for optimal results.

As an initial matter, claims 3-18 are non-obvious and patentable for the same reasons recited in section II above.

The examiner's obviousness rejection is also respectfully traversed. The Applicant submits that Hugo does not disclose IR_T reflective flakes having the composite structure of the invention and accordingly, routine experimentation could not possibly have led to the present invention. Indeed, the examiner has not even demonstrated that the claimed structure and/or the surface features of the core particles are features that are recognized by those skilled in the art as being optimizable. Moreover, as explained above, the specially selected texture range of the

present invention has unexpected advantages in IR_T reflective coating compositions comprising the specified composite flake structure.

IV. NEW CLAIM 20

New claim 20, directed to a method for using an infrared reflective flake. New claim 20 is patentable for the same reasons recited with respect to claims 1-18 above.

CONCLUSION

For the reasons set forth above, the Applicant submits that independent claims 1 and 20 are clearly patentable over the cited prior art. Claims 17 and 18 are patentable by reference to claim 1 and claims 2 to 16 are patentable merely by virtue of their respective dependencies.

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Respectfully submitted,

Date: January 30, 2008

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